

What is claimed is:

1. A buffer circuit device receiving differential input signals and outputting differential output signals, comprising:

5 a buffer circuit receiving the input signals and outputting the output signals;

 a common mode level generator circuit outputting a specific level of a common mode voltage for the output signals to be output from said buffer circuit;

10 a common mode voltage detection circuit detecting a common mode voltage of specific signals; and

 a bias voltage adjusting circuit adjusting a bias voltage to be supplied to said buffer circuit by comparing an output signal of said common mode level generator circuit with an output signal of said common mode voltage detection circuit.

20 2. The buffer circuit device as claimed in claim 1, wherein said common mode level generator circuit outputs a signal having a preferable voltage level as a common mode voltage of input signals of a next-stage circuit to which the output signals of said buffer circuit are supplied.

25 3. The buffer circuit device as claimed in claim 2, wherein said common mode voltage detection circuit detects a common mode voltage of the output signals of said buffer circuit.

30 4. The buffer circuit device as claimed in claim 3, wherein said common mode voltage detection circuit outputs the output signal to said bias voltage adjusting circuit by processing the detected common mode voltage and an output voltage of said common mode level generator circuit.

35 5. The buffer circuit device as claimed in claim 4, wherein said common mode voltage detection circuit comprises:

 a first and a second resistor elements coupling the differential input signals; and

a third resistor element connected in series to an output of said common mode level generator circuit.

6. The buffer circuit device as claimed in claim 5, wherein said common mode voltage detection circuit further comprises:

10 a first capacitor element connected between a common connection node of said first and second resistor elements and a specific power supply line; and
10 a second capacitor element connected between an output node of said third resistor element and said specific power supply line.

15 7. The buffer circuit device as claimed in claim 6, wherein said bias voltage adjusting circuit is a comparator having a first input connected to the common connection node of said first and second resistor elements and a second input connected to the output node of said third resistor element.

20 8. The buffer circuit device as claimed in claim 2, wherein said common mode voltage detection circuit detects a common mode voltage of output signals of said next-stage circuit.

25 9. The buffer circuit device as claimed in claim 8, wherein said common mode voltage detection circuit outputs the output signal to said bias voltage adjusting circuit by processing the detected common mode voltage and an output voltage of said common mode level generator circuit.

30 10. The buffer circuit device as claimed in claim 9, wherein said common mode voltage detection circuit comprises:

35 a first and a second resistor elements coupling the differential input signals; and
a third resistor element connected in series to an output of said common mode level generator circuit.

11. The buffer circuit device as claimed in claim

10, wherein said common mode voltage detection circuit further comprises:

5 a first capacitor element connected between a common connection node of said first and second resistor elements and a specific power supply line; and
 a second capacitor element connected between an output node of said third resistor element and said specific power supply line.

10 12. The buffer circuit device as claimed in claim 11, wherein said bias voltage adjusting circuit is a comparator having a first input connected to the common connection node of said first and second resistor elements and a second input connected to the output node of said third resistor element.

15 13. The buffer circuit device as claimed in claim 2, wherein said common mode level generator circuit comprises a replica circuit depending on said next-stage circuit.

20 14. The buffer circuit device as claimed in claim 13, wherein said replica circuit has features corresponding to all the features of said next-stage circuit.

25 15. The buffer circuit device as claimed in claim 13, wherein said replica circuit has features corresponding to some of the features of said next-stage circuit.

30 16. The buffer circuit device as claimed in claim 2, wherein said common mode level generator circuit comprises a constant current source.

35 17. The buffer circuit device as claimed in claim 2, wherein said common mode level generator circuit comprises a plurality of resistor elements connected between a high potential power supply line and a low potential power supply line, and generates a specific level divided by said plurality of resistor elements.